16. A membrane structure comprising a tubular porous ceramic monolith support which has an average pore size of 1 to 20 microns having at least four tubular conduits formed within the monolith with a zeolite membrane formed on the internal surface of the conduits, the zeolite membrane having an internal diameter of 5 to 9 millimetres and the ceramic monolith having an outer diameter of 20 to 25 millimetres.

17. A structure as claimed in claim 16 in which the zeolite membrane has a diameter of 6.4 millimetres.

18. A structure as claimed in claim 16 in which the ceramic monolith has an outer diameter of 20mm.

19. A structure as claimed in claim 16 in which the porous ceramic monolith is formed of a sintered ceramic powder of alpha alumina, titania or zirconia.

20. A membrane structure comprising a tubular porous ceramic monolith support which has an average pore size of 1 to 20 microns having at least four tubular conduits formed within the monolith with a zeolite membrane formed on the internal surface of the conduits, the zeolite membranes having an internal diameter of 5 to 9 millimetres and the ceramic monolith having an outer diameter of 20 to 25 millimetres, in which the zeolite membrane is formed by a process which comprises deposition or crystallisation from a growth medium onto the ceramic monolith.

21. A membrane structure as claimed in claim 20 in which the porous support is contacted with the growth medium by contacting the inner surface of the tubular conduits with the growth medium.

22. A membrane structure as claimed in claim 21 in which the porous support is pre-treated with a zeolite initiating agent.

23. A membrane structure as claimed in claim 20 in which the porous support is pre-treated with a zeolite initiating agent selected from a cobalt, molybdenum or nickel oxide or particles of a zeolite.

24. A membrane structure as claimed in claim 20 in which the porous support is pre-treated with a zeolite initiating agent selected from silicic acid or polysilicic acid.

25. A membrane structure as claimed in claim 20 in which the porous support is pre-treated with a zeolite initiating agent by a process in which a liquid suspension of a powder of the zeolite initiation agent is formed and the liquid suspension contacted with the porous support to deposit the zeolite initiation agent on the support and in which the porous support is then contacted with the growth medium by contacting the inner surface of the tubular conduits with the growth medium and after formation, the membrane is treated with a surface modifying agent which cross links with the zeolite membrane to form a membrane with substantially no defects.

26. A membrane structure as claimed in claim 25 in which, after formation, the membrane is treated with a surface modifying agent which cross links with the zeolite membrane to form a membrane with substantially no defects is selected from silicic acid or an alkyl silicate.

The claims have been reduced in number in order to reduce any issues and thereby assist the Examiner.

Respectfully submitted,

Ronald B. Sherer
Counsel for Applicant
Registration no. 19,977

Bartlett & Sherer
103 South Shaffer Drive
New Freedom, PA 17349
Telephone: (717)227-1197